

Application No. 10/601,361

Reply to Office Action

REMARKS

Reconsideration of the above-identified application is respectfully requested in view of the foregoing amendments and the following remarks.

Summary of the Application

Claims 1, 2 and 4-20 are currently pending.

Summary of the Office Action

The Office Action acknowledges that claims 1, 2 and 4-20 are pending, with claims 1, 2, 4-10, 19 and 20 being rejected. Claims 11-18 are deemed allowable. Claim 3 is objected to, although Applicants note that claim 3 was canceled in the prior response.

Specifically, claims 1, 2, 4-10, 19 and 20 are rejected as obvious over U.S. Patent 5,422,234 to Bauer et al. ("Bauer") and U.S. Patent 4,011,082 to Sakai et al. ("Sakai"). The Action argues that Bauer discloses the thermally processable imaging element substantially as claimed, while Sakai discloses the surfactants as claimed. The Action concludes that it would have been obvious to one skilled in the art to use the surfactant taught in Sakai to facilitate the coating process on the material taught in Bauer, thereby providing the material as claimed.

The Office Action deems Applicants prior arguments concerning non-analogous art to be non-persuasive. Sakai teaches the use of surfactants to facilitate a coating composition containing a binder, such as a hydrophilic colloid. Bauer, it is argued, discloses the use of various colloids as binders for the thermally-developable composition, including hydrophilic colloids. Therefore, the Office Action concludes it would have been obvious to one skilled in the art to select a surfactant taught in Sakai that is compatible with a hydrophilic binder such as gelatin taught by Bauer with a reasonable expectation of improving the coating process of the thermally-developable material, thereby providing the material as claimed.

The Office Action also rejects Applicants assertion of hindsight, on the basis that the knowledge used to make the aforesaid combination was within the level of ordinary skill at the time the claimed invention was made. As the combination purportedly does not rely on knowledge gleaned only from Applicant's disclosure, such a reconstruction is said to be proper.

Application No. 10/601,361

Reply to Office Action

Finally, the Office Action rejects Applicants argument that it is not uncommon for a photographic antifoggant useful in conventional photographic material to cause various types of fog when incorporated into substantially light-insensitive thermographic or photothermographic material. More specifically, the Office Action contends that there is no evidence showing that the surfactant useful in the photographic material would not be compatible with the surfactants for a thermographic or photothermographic material. The intent of using a surfactant is to improve the coating process, rather than modify the photographic property of the material.

Discussion

Applicants respectfully traverse the obviousness rejection of claims 1, 2, 4-10, 19 and 20 for the following reasons.

As previously discussed, the Bauer and Sakai references are not properly combinable because they constitute non-analogous art.

The imaging arts have long recognized that the field of thermography (comprising both photothermography and substantially light-insensitive thermography) are clearly distinct from that of photography. Photothermographic and substantially light-insensitive thermographic materials (e.g., Bauer) differ significantly from conventional silver halide photographic materials (e.g., Sakai) which require processing using aqueous processing solutions.

In photothermographic and substantially light-insensitive thermographic imaging materials, a visible image is created by heat as a result of the reaction of a developer incorporated within the element. The development process for these materials should generally exceed 50°C, and routinely exceeds 100°C. In contrast, conventional wet-processed photographic imaging elements require processing in aqueous processing baths to provide a visible image (e.g., developing and fixing baths) and development is usually performed under more moderate temperatures (e.g., 30° to 50°C) to provide a visible image.

Because photothermographic and substantially light-insensitive thermographic elements require thermal processing, they pose different considerations and present distinctly different problems in manufacture and use, compared to conventional wet-processed silver halide photographic materials. Additives that have one effect in conventional silver halide photographic materials may behave quite differently when incorporated in substantially light-insensitive thermographic or photothermographic materials where the underlying chemistry is

Application No. 10/601,361

Reply to Office Action

significantly more complex. The incorporation of such additives as, e.g., stabilizers, antifoggants, speed enhancers, sensitizers, supersensitizers and spectral and chemical sensitizers in conventional photographic materials is not predictive of whether such additives will prove beneficial or detrimental in substantially light-insensitive thermographic or photothermographic materials. For example, it is not uncommon for a photographic antifoggant useful in conventional photographic materials to cause various types of fog when incorporated into substantially light-insensitive thermographic or photothermographic materials, or for supersensitizers that are effective in photographic materials to be inactive in photothermographic materials.

Applicants against point out that these and other distinctions between photothermographic and substantially light-insensitive thermographic materials and photographic materials are described in *Imaging Processes and Materials (Nebelte's Eighth Edition)*: J. Sturge et al, Ed; Van Nostrand Rheinhold: New York, 1989; Chapter 9 and in *Unconventional Imaging processes*; E. Brinckman et al., Ed: The focal Press: London and New York: 1978: pp. 74-75, and in Zou, Sahyun, Levy and Serpone, *J. Imaging Sci. Technol.* 1996, 40, pp. 94-103. Applicants would be pleased to forward copies of these materials upon request.

In view of the foregoing, applicants submit that it is generally accepted by those skilled in the art that the photographic art (e.g., Sakai) is not analogous to thermography (e.g., Bauer). Therefore, even if one were to identify a problem with a surfactant in a system such as that disclosed in Bauer, nothing in Sakai or Bauer would have provided one skilled in the art with any reasonable expectation of a beneficial outcome if a Sakai surfactant was selected any more than one might have with any surfactant known in the art.

Further in this regard, most ingredients are selected to provide a material with certain functional properties. However, one cannot select such components blindly, without considering their possible impact on other properties of the material. In imaging, these problems may range from solubility issues to specific interactions with other components, e.g., adsorption, poisoning, side effects, etc. Moreover, notwithstanding the intrinsic mix of properties a component may possess, there may also be impurities associated therewith as remnants of the process used to produce that particular component.

To simply state that a surfactant will only act as a surfactant in any composition defies the common general knowledge of those skilled in the relevant art. In practice, and in the

Application No. 10/601,361

Reply to Office Action

present case, one is unable to predict with reasonable certainty that the introduction of a particular component, here a surfactant, into an existing composition would be beneficial or harmful—it simply cannot be reasonably known—only speculated.

The prior art itself must suggest the combination. As the application and prior art is generally in the unpredictable field of chemistry, there must be some teaching in the references themselves which provide the requisite predictability. Indeed, the Office Action's sole basis of predictability is that both references include colloids. However, this is an oversimplification, which overlooks other components that are included in the compositions, as well as the type of processing that the compositions undergo. All of these differences add to the unpredictability of which Applicants refer, and there is nothing in the prior art or Office Action which overcomes this unpredictability.

In addition, the problems sought to be solved by Sakai are to provide a silver halide photographic lithographic light-sensitive material having a high halftone gradation, and to provide such a material that can be used to form a halftone image with superior dot quality. Thus, it logically follows that one skilled in the art would only use a component disclosed in Sakai if one desired to address one the problems described in Sakai. The goal of Bauer, of course, is not to address any problems purportedly solved by Sakai. On the contrary, Bauer desires to provide an improved thermally processable imaging element having an adhesion-promoting-interlayer which overcome the disadvantages of the prior art. *See Bauer, col. 3, lines 18-22.* To the extent that there is no correspondence of problems and solutions in the cited prior art, an obviousness rejection cannot stand. Here, Sakai, directed to silver halide emulsion photography, is not at all concerned, in any manner, with Bauer's desire to increase adhesion, nor more generally with Bauer's thermographic materials which are substantially light-insensitive. In short, there is no legally-sufficient justification for picking a surfactant in Sakai and dropping it into a Bauer composition with a reasonable expectation of success, as asserted in the Office Action. The only justification for the asserted combination is hindsight, as the references themselves to not motivate one to introduce the Sakai surfactant into the Bauer material.

Assuming *arguendo* the asserted combination is proper, one would not simply select the surfactant, without more. Indeed, one skilled in the art would be obligated to introduce the other components, resulting in a material containing photosensitive silver halide. However, the

Application No. 10/601,361

Reply to Office Action

presence of photosensitive silver halide is specifically excluded in the claims via the term "substantially light-insensitive."

Again, Applicants respectfully contend that the selection set forth in the Action is based on hindsight analysis. Sakai teaches a system that is not analogous to the Bauer system, and therefore neither reference reasonably can be said to motivate one skilled in the art to select any of the Sakai surfactants for use in the Bauer system, let alone the particular surfactants selected by the Action. There is no teaching or suggestion in the references themselves indicating that the Sakai surfactant could successfully be used in the Bauer material.

Absent any basis in the references themselves supporting the rejection, withdrawal of the rejections of claims 1, 2, 4-10, 19 and 20 is respectfully requested.

Conclusion

Applicants submit that the application is now in proper condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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